

Students dive into curriculum, run away with knowledge

Whether inside the USU dive lab, outside in the blistering summer heat or utilizing the latest in exercise equipment, Department of Military and Emergency Medicine (MEM) topics range from the effects of heat transfer out of the body in cold to underwater medicine to advanced emphasis on cardiopulmonary and musculoskeletal systems.

“Particularly in emergency medicine, experience is a more powerful teaching tool than a test question or line from a book,” said Navy Lt. Christopher Steele, Ph.D. assistant professor in MEM. “It is one thing to teach about the effects of cold water immersion on the body, but actually dunking the students into ice-water for several minutes brings the experience to life. We can let them experience the initial cold-induced gasp reflex, monitor their own cardiovascular responses, and eventually become subjected to the loss of motor control through manual dexterity tests.”

Sports and health medicine may be part of a regular medical school curriculum, but rarely are the effects and increased emphasis experienced the way USU students do. These topics relate to military medicine because of the environmental factors and stresses servicemembers experience.

Hypothermia from cold environments and pressure changes from different altitudes aren’t unique to the practice of military physicians, but they are more commonly experienced.

Through its Applied Physiology course, MEM instructors guide USU students through exercises and events designed to illustrate concepts such as heat transfer out of the body in cold water, how light and sound travel in water, and when pulmonary function tests should be used to diagnose pulmonary disorders.

Optional aviation laboratories also simulate effects of altitude on the body. They also illustrate why exercise impacts the flow of oxygen, or the differences in oxygen capacity from rest to complete exertion, and how concepts of exercise apply to military operations.

“Because the students self-sufficiently run the cardiopulmonary lab, they can see a proper graph of oxygen after breathing in the machine, and learn how injuries or disease may impact those graphs,” said Navy Lt. Brian Andrews-Shigaki. “The importance of our course is to bridge the gap between the basic sciences and the operational environment.”

“The success of our students culminates when they begin their practice of medicine,” said Steele. “But, none of it would be possible without the expertise, technical guidance, safety monitoring and support of our USU staff.”

To ensure the real success of its students, MEM pulls in Sports Medicine doctors, enlisted and officers with diving experience, and a number of in-house experts. They use their training and real-world experiences for the benefit of the students.